REMARKS

By this Amendment, the specification is amended to correct minor informalities, independent claims 1 and 43 are amended merely for clarity and claims 5-36 are cancelled without prejudice or disclaimer. Claims 1-4 and 37-45 are pending.

The specification and claims have been amended to overcome specification and claim objections.

Claims 1-24 and 37-45 were rejected under 35 U.S.C. 102(a) as being anticipated by Berger et al. (WO 00/25,485; hereafter "Berger"). Claims 35-36 were rejected under 35 U.S.C. 103(a) as being unpatentable over Berger in view of Arnold et al.(U.S. 5,884,181; hereafter "Arnold"). Claims 35-36 were rejected under 35 U.S.C. 103(a) as being unpatentable over Berger in view of Ayyagari et al.(U.S. 6,018,659; hereafter "Ayyagari").

The cancelling of claims 5-36 renders the rejections of those claims moot. Applicants traverse the rejections of the remaining claims because the cited prior art, analyzed individually or in combination, fails to teach or suggest all the features recited in the rejected claims. For example, the combined teachings of the cited prior art fails to teach or suggest the claimed join process for admitting a node to a wireless mesh network including "active network nodes transmitting organized invitation data packets on defined sectors, frequencies and timing, based on their relative location and possible connectivity to the joining node deduced from sub-sectors already used for existing internal network communication, thus reducing frequency interference and reducing time required for the join process" as recited in independent claim 1.

Preliminarily, Applicants provide an explanation of the type of nodes to which the invention pertains. The type of node to which the present invention defined in original claims 1 and 37 applies is a node which covers a relatively large sector angle. In use, the large sector angle is divided up by the node into a number of component sub-sectors (see, for example, the representation of nodes 21 to 24 illustrated in Figure 2). Each covers a large sector angle (202 to 208) made up of a number of sub-sectors.

Communication between network nodes is performed along particular sub-sectors of a pair of communicating nodes. The orientation of each node (and its sector) defines a region within which it can establish and partake in communication with other nodes. If another node is out of the region covered by the sector and/or is configured such that there is no alignment of sub-sector directions, these two nodes are unable to communicate with each other directly.

Referring to Figure 3, it can be seen that communication between nodes 21 and 24 is via link 25 in sub-sector 2 of node 24 and sub-sector 12 of node 21. This arrangement of large sector angle and component sub-sectors is important to the join process of the present invention as defined in original claims 1 and 37.

In the rejections, the Office Action referred to the passage of Berger on page 27, last paragraph to page 28, first paragraph; however, this passage simply states that "a radio node listens for an invitation signal in a spatial azimuth at a given frequency for a sufficient length of time. Having not received an invitation signal, it has to scan to the next frequency and azimuth". However, this passage does not teach active network nodes transmitting organised invitation data packets on defined sectors, frequencies and timing, based on their relative location and possible connectivity to a joining node deduced from sub-sectors already used for existing internal network communication.

In fact, the cited passage of Berger actually teaches a joining node that listens for an invitation signal at a specific frequency for a particular length of time and in a particular direction and, if nothing is received, scans to a different frequency and azimuth. Thus, there is certainly no mention of active network nodes using deduced knowledge from their relative location and the possible connectivity to the joining node to affect, in any way, the sub-sector frequencies or timing on which an invitation is transmitted. Therefore, the subject matter of claim 1 is not taught or suggested by the cited prior art. Accordingly, claims 1-4 are allowable.

Similarly, the cited prior art fails to teach or suggest the claimed method for adding a joining node to the wireless mesh network in which in a designated network node, communication with a joining node is initiated by "scanning on a first sector with highest probability of locating the joining node" and "subsequently scanning on sectors of lower probability of locating the joining node", as recited in claim 37. Again, the passage bridging pages 27 and 28 of Berger merely discloses a joining node listening for an invitation signal in a spatial azimuth at a particular frequency for a sufficient length of time and, if no invitation is received, scanning to a next frequency and azimuth.

To the contrary, claim 37 requires at least one network node that scans, on a first sector with highest probability of locating a joining node, and subsequently scans, on sectors of lower probability of locating a joining node. However, the passage cited by the Office Action as teaching or suggesting this feature actually refers to a scanning action of a joining node and not a network node. Accordingly, Berger fails to teach or suggest scanning by a

network node based on probability of locating a joining node, but also the recited scanning sectors scanned by the network node.

There is no mention at all in Berger of reliance on probability for selecting the sectors which are to be scanned by the network node. Indeed, there is nothing in Berger that even suggests that a network node should rely on probability when issuing invitation packets to a joining node.

Therefore, the subject matter of claim 37 is not taught or suggested by the cited prior art. Accordingly, claims 38-42 are allowable.

Finally, Applicants submit that claim 43 is patentable over the cited prior art because the cited prior art fails to teach or suggest the claimed method including "scheduling transmission of data packets....to create spectral activity for detection...by the one or more joining nodes" and "identifying spatial directions toward the inviting network nodes, tuning to a defined frequency channel in the identified spatial direction to receive an invitation packet transmitted by the inviting network nodes...". In other words, initially spectral activity is created which enables identification of radio frequency activity of the inviting network nodes at defined frequency channels. The spectral direction of the inviting network node is then identified. After tuning to the defined frequency in the identified spectral direction, an invitation packet is received.

The Office Action referred to page 18, lines 13 to 16 and, lines 10 to 12 of Berger as teaching or suggesting the features of claim 43. However, the Office Action has failed to identify what passages of Berger teach or suggest the use of spectral activity, i.e., transmissions that are different from invitation packets, for identification of activity of inviting nodes. Again, as with the discussion of the rejection of claims 1 and 37 explained above, there is nothing in Berger that teaches or suggests the use of spectral activity as recited by claim 43. Therefore, independent claim 43 and its dependent claims 44-45 are allowable.

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Respectfully submitted,

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